## What is claimed is:

- 1. A method for removing antimony from waste water comprising the steps of:
  - passing a contaminated liquid through an anion exchange media placed within an anion exchange column;
  - monitoring said anion exchange column for gas build-up; and removing built-up gas from said anion exchange column.
- 2. The method of Claim 1, further comprising the steps of partially filling said anion exchange column with said anion exchange material, wherein said waste water forms a layer above said anion exchange material.
- 3. The method of Claim 1, further comprising the step of replacing said built-up gas with waste water, wherein said step of replacing maintains a substantial portion of said anion exchange material under said waste water.
- The method of Claim 1, further comprising the steps of:
  monitoring an interface between said built-up gas and said waste water;
  and
  - removing said built-up gas from said anion exchange column when said interface reaches a predetermined level.
- 5. The method of Claim 1, wherein said step of removing built-up gas further comprises the step of applying a positive pressure to said anion exchange column by closing an exit valve in said anion exchange column.

- 6. The method of Claim 5, said anion exchange column further comprises a gas release mechanism located above an interface between said waste water and said built-up gas.
- 7. The method of Claim 1, wherein said step of removing built-up gas occurs automatically when an interface between said built-up gas and said waste water reaches a predetermined level.
- 8. The method of Claim 1, wherein said anion exchange column comprises a substantially transparent vessel.
- 9. The method of Claim 1, wherein said anion exchange column comprises a vessel with a substantially transparent window for observing an interface between said built-up gas and said waste water.
- 10. The method of Claim 1, wherein said anion exchange column comprises a vessel with at least one electrode for determining a level of an interface between said built-up gas and said waste water in said anion exchange column.
- 11. The method of Claim 1, wherein said anion exchange column comprises a vessel with a sonic level indicator for determining gas build-up levels in said anion exchange column.
- 12. The method of Claim 1, wherein said anion exchange column comprises a vessel with an ultrasonic level indicator for determining gas build-up levels in said anion exchange column.
- 13. The method of Claim 1, wherein said anion exchange column comprises a vessel and a radiation source on one side of said vessel and a radiation detector on the opposite side of said vessel, wherein said radiation source

- and said radiation detector are used to determining gas build-up levels in said anion exchange column.
- 14. The method of Claim 1, wherein said anion exchange column comprises a vessel with a level indicating tube.
- 15. The method of Claim 1, wherein the volume of waste water that can be effectively processed by said anion exchange column is at least 900 column volumes.
- 16. The method of Claim 1, wherein said anion exchange column further comprises an intake port below an interface between said waste water and said built-up gas and a gas release mechanism above said interface.
- 17. The method of Claim 1, wherein said anion exchange column further comprises a diffusion plate above said anion exchange material and below an interface between said waste water and said built-up gas.
- 18. The method of Claim 1, wherein said waste water further comprises borate.
- 19. The method of Claim 18, wherein said borate has a concentration of approximately 500-1200 ppm of boron.
- 20. An anion exchange column for removing antimony from waste water comprising:
  - a vessel having a monitoring mechanism for monitoring a level of an interface between said waste water and gas-build up in said anion exchange column;

an intake port for receiving waste water; an anion exchange material; and

- an output port.
- 21. The anion exchange column of Claim 20, wherein said vessel is at least in part substantially transparent so as to be able to observe said level through said part.
- 22. The anion exchange column of Claim 20, wherein said entire vessel is substantially transparent.
- 23. The anion exchange column of Claim 20, wherein said vessel further comprises a substantially transparent window located in a position where said gas/waste water interface can be observed.
- 24. The anion exchange column of Claim 20, wherein the volume of waste water that can be effectively processed by said anion exchange column is at least 900 column volumes.
- 25. The anion exchange column of Claim 20, wherein said anion exchange column further comprises an intake valve below said interface and a gas release mechanism above said interface.
- 26. The anion exchange column of Claim 20, wherein said anion exchange column further comprises a diffusion plate below said interface and above said ion exchange material.
- 27. The method of Claim 20, wherein said waste water further comprises borate.
- 28. The method of Claim 27, wherein said borate has a concentration of approximately 500-1200 ppm of boron.

29. An anion exchange column for removing antimony from waste water comprising:

a vessel;

an input port for receiving waste water;

an anion exchange bed immersed with said waste water; and an output port for removing said waste water after processing, wherein said vessel is configured to hold a volume of waste water which is at least two times the volume of said anion exchange material in said vessel.

- 30. The anion exchange column of Claim 29, wherein said vessel is configured to hold a volume of waste water which as at least four times the volume of said anion exchange material in said vessel.
- 31. The anion exchange column of Claim 29, wherein said vessel is configured to hold a volume of waste water which as at least ten times the volume of said anion exchange material in said vessel.
- 32. The anion exchange column of Claim 29, wherein the volume of waste water than can be effectively processed by said anion exchange column is at least 900 column volumes.
- 33. The method of Claim 29, wherein said waste water further comprises borate.
- 34. The method of Claim 33, wherein said borate has a concentration of approximately 500-1200 ppm of boron.